



Few foods consumed by soldiers through the ages have been as important — or as widespread — as bread.

From Horse Blood To Hot Pockets



Story by Heike Hasenauer

U.S. Army Rations

salted fish



rice



beans



The development of rations to feed the military is a story with some very colorful twists and turns. . .

MILITARY rations have improved greatly since the time when Genghis Khan issued a “survival ration” to his troops — a straw they could use to drink their horses’ blood when other rations were scarce.

“The development of rations to feed the military is a story with some very colorful twists and turns,” said Gerald Darsch, joint project director, Department of Defense Combat Feeding Program at the U.S. Army Natick Soldier Systems Center in

Natick, Mass.

Over the years, the Army has improved not only the means of getting food to its troops, but the quality of the food as well.

In 1775, during GEN George Washington’s fight to secure and maintain freedom, a soldier’s diet was of little importance to his superiors, Darsch said.

But 1775 did mark a step forward: the Second Continental Congress established a standard ration for soldiers. It included 1 pound of beef, or 3/4 pound of pork, or 1 pound of salted fish per week; 1 pound of bread or flour per week; 3 pints of peas or

bread



The standard soldier ration established in 1775 included salt fish, rice, beans and bread, though the quality of the food varied considerably.

beans per week; 1 pint of milk per day; 1/2 pint of rice or 1 pint of Indian meal per week; and 1 quart of spruce beer or cider per day.

“Actually, the first hundred years of our nation’s history are full of stories about how more soldiers died from disease than bullets,” said CW3 Stephen Moody, who was assigned to the SSC before deploying to the Persian Gulf earlier this year.

In the late 1700s, as the government of the United States was taking shape, “mechanisms were established for the purchase and distribution of food,” Moody said.

The Army required

At the other end of the ration food chain, so to speak, is the soon-to-be-introduced pocket sandwich.

Kathy-Lynn Evangelos, executive assistant to the joint project director, DOD Combat Feeding Program, contributed to this article.





Soldiers of the 65th Infantry Regiment enjoy a hot meal after all-day maneuvers near Salinas, Puerto Rico, in 1941.

that the animals it purchased for food be branded, and that food containers destined for the military be marked, Moody added.

New York meat supplier Samuel Wilson stamped "US" on his crates of meat, said Moody. And legend has it that because he was so congenial and popular with the troops, he became affectionately known as "Uncle Sam."

After the War of 1812, soldiers planted gardens at their posts to more readily provide for themselves. Fresh vegetables supplanted some of the bread and beans of their earlier diets, Darsch said.

Significant changes to the Army's food-supply system occurred during the Civil War, with the limited introduction of canned foods and the beginning of ration classification, Moody added.

But the quality of canned foods was questionable, wrote Paul Steiner

in his book "Disease in the Civil War." Most men didn't receive canned foods. And diarrhea and dysentery in the Federal Army between 1861 and 1866 accounted for nearly 45,000 deaths.

Another shortfall was in the quality of the "camp" or "garrison" ration,

versus the "marching" ration.

The former consisted of everything from pork and beef, bread, beans, potatoes and rice to molasses, and included seasonings, soap and candles. Vegetables and dried fruits were also sometimes added, said Philip Stern in his book "Soldier Life in the Union and Confederate Armies." The Marching Ration was limited to pork, beef, sugar, coffee and salt.

Civil War physicians recognized that rations high in meat and salt and low in vegetables were causing night blindness and scurvy, according to a 1947 Quartermaster Corps report. But fresh vegetables were too heavy to transport easily. So, something called "desiccated vegetables" was tested on the troops.

Known as "desecrated vegetables" by the cooks, it was a mixture of various dried vegetables pressed into hard clumps that softened when boiled.



The 1980s saw the emergence of tray rations, or T-rats, which included a variety of newer and more palatable foods. These rations also included such convenience items as Tabasco sauce.

U.S. Army Rations

A member of the 3rd Iowa Cavalry Regiment wrote: "We've boiled, baked, fried, stewed, pickled, sweetened, salted and tried it in puddings, cakes and pies; but it sets all modes of cooking in defiance, so the boys break it up and smoke it in their pipes."

When Napoleon announced a prize of 12,000 francs for a method of preserving food for his armies, Nicolas Appert presented his method of food preservation by eliminating air trapped within the food and then heating it in a sealed container, Moody said. Fifty years later, Louis Pasteur theorized that controlling the growth of microorganisms would preserve food.

"But it wasn't until 1895 that the Massachusetts Institute of Technology developed the first scheduled food-preservation process and formally documented the steps necessary to ensure commercial sterility," Moody said.

Not until the late 1800s were U.S. military cooks formally trained, and it wasn't until 1902 that the Army established the first school for baking and cooking, at Fort Riley, Kan.

The Subsistence Department of the Office of the Quartermaster General was established in 1918, a year after the United States entered World War I. Subsequently, nutritional survey parties were organized and sent to teach cooks about nutrition, and how to inspect food. It was the first time hot meals were served to U.S. troops on the front lines, Darsch said.

Soon after, the "Trench Ration" evolved to provide soldiers the most popular ration items of the time: tobacco and a half pound of candy issued every 10 days, said Darsch.

World War II advances in food technology, and the response from industry and academia to the Army's needs, resulted in more than 23 different rations and ration supplements, Darsch added. The "C Ration," or "Ration, Combat, Individual," was developed. Weighing seven pounds, it offered soldiers 11 meal options, five of which contained beans.

But the "K Ration" was the most



C-rations were probably the most common type of food served to soldiers in the field during World War II.

famous of the World War II-era rations, Darsch said. Originally designed to fit in paratroopers' pockets, the two-and-a-half pound meal was the most nutritionally balanced of the rations available at the time. Soldiers were supposed to depend on the K-Ration for only up to three days. The fact that they actually ate it for weeks on end caused some digestive-tract problems, he said.

The "D Ration," or "D Bar," was the first survival ration of World War II. It contained three 4-ounce bars of thick, high-calorie chocolate. COL Paul Logan developed the bar with the intent that it not taste too good, for fear the men would consume it rather than carry it until an emergency arose, Darsch said.

World War II also saw development of group rations for specific operational requirements, including jungle and mountain operations. "Near



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the end of the war, the idea of assembling 100-man units of food evolved into what's known today as the 'B-Ration,' still used as a group meal," Darsch said.

Shelf-stable canned fruits, cakes and bread were added to the C Ration during the Korean War. And pre-cooked frozen meals, the forerunners of TV dinners, accompanied crews on large, long-range aircraft, Darsch said.

In 1958 "Meal, Combat, Individual," or MCI, replaced the C-Ration. It was a 2.7-pound, 1,200-calorie individual meal, rather than an entire ration, Darsch said.

Flexible packaging and freeze-drying were incorporated into the



In addition to food, World War II K-rations provided cigarettes — which remained a feature of Army rations into the 1980s.

Long-Range Patrol Ration, a large-portion meal used throughout the Vietnam War. It included chicken stew and scalloped potatoes with pork.

In 1963 the U.S. Army Natick Laboratories (now the Soldier Systems

Center) worked with NASA to develop meals for crews of the early space programs, Darsch said.

"Programs that originated in 1960 to produce compressed, dehydrated foods, semisolid foods in collapsible aluminum tubes and irradiated foods continue today," Darsch said.

A notable addition to the food market in the 1960s and 1970s was hermetically sealed flexible packaging, known as the retort pouch. "This system probably represents the greatest scientific and engineering breakthrough in food packaging and processing," Darsch said. At that time,



Boxed rations have always been a field staple, as they were for these 347th Inf. Regt. soldiers in Belgium in January 1945.



Marilyn Noakes

Today's soldiers can usually expect hot food under most field conditions, though meals are far less elaborate under combat conditions.

Natick and the American food manufacturing industry were tasked to produce a new combat ration — a lightweight, individual meal, without a metal container.

What was to become the famous “Meal, Ready-to-Eat,” MRE, went into production in 1980. Field tests of the MRE led to changes from freeze-dried entrees, starches and fruits to wet-pack items, and the addition of commercial entrees, candies, hot sauce and freeze-dried coffee.

Today, the MRE comes in 24 varieties, but the little bottle of Tabasco sauce soldiers use to flavor the food remains one of the most popular items, Darsch said.

Probably less well-known is that period's introduction of a dental liquid ration requested by officials at Walter Reed Army Medical Center in Washington, D.C., for patients whose jaws were wired shut, Darsch said.

The first dental liquids were created by pulverizing freeze-dried meats and reconstituting them as beverages.

In more recent history, in response to Operation Desert Shield in the Persian Gulf, industry developed the Desert

Bar that soldiers called “the chocolate bar that melts in your mouth, not in the sand.” The Army

also introduced Shelf-Stable Pouch Bread.

The latter evolved into the soon-to-be-introduced shelf-stable, deli-like “pocket sandwich.”



The newest version of the MRE includes such entrees as beefsteak grilled with mushrooms — a notable improvement over some of the earlier MREs.

Army rations have continued to change over the years, based on both technological advancements and the Army's needs. Methods of food storage, shipment and preparation have also improved, Darsch said.

Time-Temperature Indicators, which darken over time to indicate when MRE cases are nearing expiration dates, and the Flameless Ration Heater, which allows soldiers to heat rations in the field, are only two of many food-related improvements.

“Today, the job of DOD's subsistence community is as challenging as ever,” Darsch said, “because the high-tech weapons of the digitized battlefield are only as good as the soldiers who operate them. And food is what keeps the Army running.” □



Sarah Underhill

While not exactly a five-star meal, MREs offer nutritious and appetizing food suited to the rigors of life in the field.

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